American Society for Testing Materials BULLETIN

ISSUED BI MONTHLY

April, 1928

Thirty-First Annual Meeting

CHALFONTE-HADDON HALL
ATLANTIC CITY, N. J.

JUNE 25-29, 1928

ENGINEERS' CLUB BUILDING
1315 SPRUCE ST., PHILADELPHIA

American Society for Testing Materials

BULLETIN

ENGINEERS' CLUB BUILDING 1315 SPRUCE STREET PHILADELPHIA, PENNA.

NUMBER 32 April 30, 1928

Annual Meeting, June 25-29

THE Provisional Program of the Thirty-first Annual Meeting of the Society, which will be held at Chalfonte-Haddon Hall, Atlantic City, N. J., has now become available and a copy is enclosed herewith. It is replete with many valuable reports and papers, the total number of items exceeding that of any previous annual meeting. Some of the outstanding features of the program are given on page 4.

It will be noted that no sessions of the annual meeting have been scheduled for the opening day, Monday, June 25, that day having been reserved for committee meetings and registration. The General Opening Session will be held on Tuesday afternoon at 2 o'clock. Immediately following this, two simultaneous technical sessions will be convened at 3 P. M. As in the past, simultaneous sessions on a number of occasions will be necessary but the General Opening Session and the closing session, on Concrete, and two other technical sessions, one devoted to Testing and the other to a discussion of Corrosion, Fatigue and Properties of Metals at Elevated Temperatures, will be single sessions. In addition, one session devoted exclusively to the Edgar Marburg Lecture and the award of the Charles B. Dudley Medal has been arranged for Wednesday afternoon, and one session devoted to the Presidential Address and the report of the Executive Committee will be held on Wednesday evening. In all, fourteen sessions will be held, each of them containing many valuable reports and papers to cover adequately each field of the Society's activities.

To secure PREPRINTS of reports and papers, use the enclosed REQUEST BLANK.

Make HOTEL RESERVATIONS at once.

Hotel Reservations

It is important that hotel reservations be made early. Atlantic City hotels may be filled to overflowing due to the fact that the meeting of the American Railway Association will overlap the early part of the A.S.T.M. meeting. It is important that those members who plan to attend the meeting of the A.R.A. and stay over for the A.S.T.M. meeting should advise the hotel management of this so that proper reservations may be insured. Members are requested to use

(Continued on page 2)

Membership and the Annual Meeting

With the approach of the annual meeting we are reminded of the many opportunities for increasing the membership of the Society. Membership has its appeal at all seasons of the year, but the apparent active period is that just preceding and following the annual meeting. It is then that the many preprints of the valuable reports and papers presented at the meeting appear. They afford concrete evidence of the Society's extreme activity and of the pertinent information that members secure on the many problems with which they may be concerned.

The subjects to come up for discussion are all listed in the Provisional Program that has just become available. Scarcely a better means could be desired than this for pointing out the many phases of testing and properties of materials that are covered by the Society. No doubt there are many with whom you associate who would profit through membership in the Society and who would appreciate being advised of the Society and its work. Additional copies of the program are available and will be furnished, on request, to any members who may have use for them. A return blank which may be used in making such requests is bound in with the program. It is principally through having its work better known that greater usefulness of the Society's work can be achieved, and bringing the Society's work to the attention of interested persons at this time of year is the best means conceivable for accomplishing that purpose.

With the efforts of 4200 members united on the task of advancing the Society, using the annual meeting as the subject of their approach, our purpose of having the Society fill its intended position of maximum usefulness will have been accomplished. At the same time, we will have strengthened the Society by securing many new valuable additions to its membership. Our aim has always been, a strong, healthy growth. To this end we seek to secure at least 500 new members each year. The membership growth during the past few months has been quite gratifying and this should be continued in the securing of at least 250 new members before the annual meeting. **Make use of the provisional program and the application blank accompanying this Bulletin.**

Annual Meeting, June 25-29

(*Continued from page 1*)

the enclosed return blank addressed to the hotel management in making reservations.

Chalfonte-Haddon Hall is operated exclusively on the American plan. The special rates that have been made available to the members and their guests, and which will prevail a few days before and after the meeting, are repeated in the return blank as announced in the March BULLETIN. The rates vary according to location of rooms and accommodations provided, and the typical floor plans reproduced in the blank should be consulted.

The Chalfonte and Haddon Hall each has its own dining room service so that members who wish to take their meals together regularly should be sure to secure reservations in the same hotel. Members may at times and by arrangement in advance take their meals in either dining room, but obviously this can be done only to a limited extent.

Transportation

Transportation has been arranged on the Identification Certificate plan, which plan provides for transportation to and from the meeting at one and one-half single fare. Details concerning this reduced fare are given in the adjoining column.

Registration at Annual Meeting

Members planning to attend the meeting are requested to fill out and mail promptly the accompanying card addressed to the Society. This will facilitate registration at the meeting. Members should arrange for the registration of ladies in their party promptly upon their arrival. Each lady registered will receive a convention pin and two tickets, each good at any station of the Shill Rolling Chair Company for one double rolling chair for one hour.

A registration fee of $1.00 will be charged all members and guests at the meeting with the exception of ladies.

The annual Golf and Tennis Tournaments will be held on Friday afternoon. The entertainment features are in the hands of a special Entertainment Committee and further accouncement concerning these features will be made in due course.

Preprints

The usual plan of distributing preprints will again be followed. Under this plan the members will receive in advance of the meeting only those committee reports and papers which they have requested the Secretary-Treasurer to forward. All members attending the annual meeting will receive as they register a complete set of preprints of reports and papers.

A request blank for preprints is enclosed on which the reports and papers are listed. A brief abstract of most of the reports and papers has been included in the Provisional Program, which should be of assistance to the members in making a selection of the items which they will wish to secure. A member wishing to obtain preprints should indicate on the blank those which he desires and should forward the signed blank promptly to the Secretary-Treasurer. The preprints requested will then be forwarded as they become available, the first installment being placed in the mails late in May. A second installment will be mailed about the middle of June and a third during or after the annual meeting.

A prompt return by each member of his request blank will greatly facilitate the distribution of preprints. **Preprints will not be mailed to members unless requested.**

Reduced Railroad Rates for Meeting

All of the Passenger Associations, with the exception of the Canadian Passenger Association (Western Lines), have granted reduced rates for transportation to the Atlantic City meeting on the Identification Certificate Plan. The Canadian National and Canadian Pacific Lines of the Canadian (Western Lines) Passenger Association have granted the reduction on tickets from Winnipeg. Round-trip tickets will be sold at one and one-half single fare to holders of identification certificates. These certificates will be mailed to the members late in May. Certificates are valid only for members and dependent members of their families. Companies, firms, etc., holding corporate Society membership and who desire to send more than one individual to represent them at the annual meeting, can secure an additional certificate for each additional representative. Requests for additional certificates, giving the name of the individual for whose use it is intended, should be sent to the Society. Certificates are only good on the purchase of tickets using the same route both going and returning.

In order to secure the reduced fare the holder of the identification certificate must present it to the ticket agent when purchasing his ticket. Members should consult their local ticket agents with regard to the dates of sale and return limit of reduced rate tickets, as these vary according to the distance from Atlantic City. Dates of sale range from June 15 to 27. Likewise, the dates by which the passenger must return to starting point range from July 5 to 20. Tickets must be validated at the local ticket offices in Atlantic City.

The Trunk Line Association, comprising New York state east of Buffalo, New Jersey, Pennsylvania east of Erie and Pittsburgh, Delaware, Maryland, District of Columbia, Virginia and West Virginia east of Wheeling and Norfolk, has, in addition to the above, offered a round-trip fare on the Identification Certificate Plan of one and three-fifths single fare with return limit of thirty days from the date of sale as against a return limit of July 5 on the one and one-half fare plan. This slight additional cost will enable members, who so desire, to remain at Atlantic City for a longer period after the meeting. Information will be available shortly as to whether the other Passenger Associations will extend this privilege.

Further announcement will be made in a circular in May with which the railroad certificates will be mailed.

Committee on Corrosion-Resistant Alloys to be Organized

Acting upon a recommendation of the Joint Advisory Committee on Corrosion, an administrative committee consisting of representatives from Committees A-5 on Corrosion of Iron and Steel and B-3 on Corrosion of Non-Ferrous Metals and Alloys, the Executive Committee has decided to appoint a new standing committee of the Society to study the alloys of the iron-chromium-nickel system, the committee to have adequate representation from both producing and consuming interests and to function under a scope that includes studies of all properties of the alloys in this system.

The discussion of this matter in the Joint Advisory Committee brought out clearly the importance of consideration by the Society of these alloys lying between the fields at present being studied by Committees A-5 and B-3. The work in the beginning will necessarily be of an investigative or research nature, but is expected to lead ultimately to the development of standard specifications and tests.

Foreign Language Editions of A.S.T.M. Standards

The Bureau of Foreign and Domestic Commerce during the last few months has released through the Superintendent of Documents, Government Printing Office, Washington, D. C., a series of pamphlets containing Portuguese language translations of A.S.T.M. Standard Specifications. These translations were prepared, published and distributed in an Industrial Standards Series under an arrangement in operation for some years, between the Society and the foreign commerce bureau.

The 15 Standards published in the Portuguese language group are listed below, including the Bureau series number, the title and the A.S.T.M. serial number:

Industrial Standard	Title and A.S.T.M. Designation
*201	For Carbon Steel Rails (A 1 – 24)
202	For Low-Carbon Steel Splice Bars (A 3 – 24)
203	For Structural Steel for Bridges (A 7 – 24)
204	For Open-Hearth Steel Girder Rails of Plain, Grooved and Guard Types (A 2 – 27)
205	For Quenched-and-Tempered Carbon-Steel Axles, Shafts and Other Forgings for Locomotives and Cars (A 19 – 27)
206	For Carbon-Steel Forgings for Locomotives (A 20 – 27)
207	For Boiler and Firebox Steel for Locomotives (A 30 – 24)
208	For Wrought Solid Carbon-Steel Wheels for Steam Railway Service (A 57 – 24)
209	For Structural Steel for Buildings (A 9 – 24)
210	For Structural Steel for Locomotives (A 10 – 24)
211	For Structural Steel for Cars (A 11 – 24)
212	For Carbon-Steel and Alloy-Steel Forgings (A 18 – 27)
213	For Steel Castings (A 27 – 24)
214	For Lap-Welded and Seamless Steel and Lap-Welded Iron Boiler Tubes (A 83 – 27)
215	For Staybolt, Engine-Bolt and Extra-Refined Wrought-Iron Bars (A 84 – 27)

* This issue is to be revised in accordance with A 1 – 27.

These publications are issued as a part of the trade promotion work of the Bureau in order to facilitate sale in Brazil, Portugal and Portuguese Africa of the commodities covered by the specifications. The work was initiated in 1917 and has been continued up to the present time. It has helped our commercial relations abroad and has aided in promoting a greater knowledge of our commodity standards in Spanish, French and Portuguese speaking countries.

Thus far the Industrial Standards Series includes 140 separate pamphlets. There are 64 in the Spanish language group, 61 in the French and 15 in the Portuguese. Some of the issues are now obsolete, since some of the Spanish or French translations have not been brought up to date to accord with the latest adopted standards of the Society.

The Bureau distributes about 1000 free copies of each, for the most part in the countries using the Spanish, French and Portuguese languages. The disposition is made through the offices of our commercial attachés and the consular service. Manufacturers and exporters have helped materially in the distribution by purchasing copies from the Superintendent of Documents and sending them to their representatives and agents abroad for circulation. Indeed, one of the means of measuring the usefulness of each standard is the number of copies purchased in this way. The price of each standard is five cents, postage free, with a material reduction when 100 or more copies of any number are mailed to one address.

In the Spanish language group there are now 24 numbers in good standing:

Industrial Standard	Title and A.S.T.M. Designation
4	For Low-Carbon-Steel Splice Bars (A 3 – 24)
5	For Medium-Carbon-Steel Splice Bars (A 4 – 14)
6	For High-Carbon-Steel Splice Bars (A 5 – 14)
7	For Structural Steel for Bridges (A 7 – 24)
8	For Structural Steel for Buildings (A 9 – 24)
9	For Structural Steel for Locomotives (A 10 – 24)
15	For Wrought Solid Carbon-Steel Wheels for Steam Railway Service (A 57 – 24)
16	For Steel Tires (A 26 – 16)
17	For Steel Castings (A 27 – 24)
21	For Boiler and Firebox Steel for Locomotives (A 30 – 24)
22	For Boiler Rivet Steel (A 31 – 24)
26	For Refined Wrought-Iron Bars (A 41 – 18)
27	For Wrought-Iron Plates (A 42 – 18)
28	For Cast-Iron Pipe and Special Castings (A 44 – 04)
29	For Cast-Iron Locomotive Cylinders (A 45 – 14)
30	For Extra-High-Carbon-Steel Splice Bars (A 6 – 14)
31	For Quenched High-Carbon-Steel Splice Bars (A 49 – 21)
32	For Quenched Carbon-Steel Track Bolts (A 50 – 24)
34	For Structural Nickel Steel (A 8 – 24)
36	For Structural Steel for Ships (A 12 – 21)
38	For Billet-Steel Concrete Reinforcement Bars (A 15 – 14)
39	For Rail-Steel Concrete Reinforcement Bars (A 16 – 14)
49	For Gray-Iron Castings (A 48 – 18)
55	For Spelter (B 6 – 18)

Ten standards in this group are at present under revision and will be reissued shortly conforming with the English texts adopted by the Society in 1927. These are: Industrial Standard 2 (A.S.T.M. A 1), 3 (A 2), 10 (A 14), 11 (A 18), 12 (A 19), 13 (A 20), 14 (A 21), 20 (A 53), 62 (A 63), and 63 (A 83). One new standard, No. 65, Zinc-Coated (Galvanized) Sheets, A 93 – 27, is now in press.

The other 30 numbers in the Spanish group have been discontinued in the foreign language edition either because the standard has been discontinued or replaced by the Society or because the Bureau has found the demand for foreign trade promotion insufficient to warrant the translation and printing of the revised text.

Of the 61 specifications in the French group, the 12 numbers listed below are in good standing:

Industrial Standard	Title and A.S.T.M. Designation
105	For Medium-Carbon-Steel Splice Bars (A 4 – 14)
106	For High-Carbon-Steel Splice Bars (A 5 – 14)
107	For Extra-High-Carbon-Steel Splice Bars (A 6 – 14)
120	For Steel Tires (A 26 – 16)
130	For Refined Wrought-Iron Bars (A 41 - 18)
131	For Wrought-Iron Plates (A 42 – 18)
133	For Cast-Iron Pipe and Special Castings (A 44 – 04)
134	For Cast-Iron Locomotive Cylinders (A 45 – 14)
140	For Spelter (B 6 – 18)
147	For Billet-Steel Concrete Reinforcement Bars (A 15 – 14)
148	For Rail-Steel Concrete Reinforcement Bars (A 16 – 14)
157	For Gray-Iron Castings (A 48 – 18)

Due to lack of funds and because the demand has been less than for the Spanish and Portuguese translations, the Bureau has made no revisions in the French language group.

It is believed that members of the Society will be interested in the foregoing information concerning the foreign language issues. It will be appreciated if members with interests abroad will continue to give encouragement to the work. The service is not limited to any one field or group of industries and the Bureau will be glad to consider recommendations regarding additions to the series.

Concrete Specifications Translated

The Report of the Joint Committee on Standard Specifications for Concrete and Reinforced Concrete, together with the specifications appearing with that report, is being translated into Spanish and published serially in INGENIERIA, the Journal of the National Faculty of Engineers, National School of Engineers, Tacuba, Mexico.

In the March BULLETIN, Dean Harvey was erroneously indicated as the Society's representative on the Joint Committee on Foundry Refractories. The representative is F. A. Harvey, Harbison-Walker Refractories Co., Pittsburgh, Pa.

AMERICAN SOCIETY FOR TESTING MATERIALS

BULLETIN

Issued Bi-Monthly

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Number 32 April 30, 1928

Technical Features of Annual Meeting

AN examination of the provisional program of the annual meeting reveals the wealth of valuable technical data that will be brought to the Society this year in the committee reports and technical papers. Brief synopses of nearly all reports and papers appear on the program, but it is impossible to list all of the principal features, especially of the committee reports. Mention is made below of a number of outstanding topics on the program.

Testing.—Three papers on wear testing of metals are the outstanding features of the testing session which, because of its wide appeal to the membership, is scheduled for a general session on Tuesday evening. These papers cover the wear testing of bronze bearing alloys, of manganese steel and of automobile tire chains, and will receive considerable discussion. Papers on calibration of testing apparatus, measurement of brittleness and determination of particle size, together with the report of the Committee on Methods of Testing, round out a very worth-while session. Other papers and reports dealing with tests of specific materials appear in appropriate sessions throughout the program.

Corrosion, Fatigue and Properties of Metals at Elevated Temperatures.—These important topics are covered in a general session on Thursday morning. Beginning with the reports of the Committee on Corrosion of Iron and Steel and the Sectional Committee on Zinc Coating, there will be presented discussions of welding of chromium alloys; two papers on corrosion-fatigue of metals; and three papers discussing properties of metals at elevated temperatures, including methods of testing and a discussion of flow in carbon steels at stresses below the proportional limit. The several topics included in this session are among those most discussed to-day in the metals field. Another paper on fatigue of cast iron has been appropriately included in the Tuesday afternoon session dealing with that material.

Petroleum Products.—On Wednesday morning there will be presented one of the most important subjects the Society has yet discussed in the field of petroleum products. Committee D-2 on Petroleum Products and Lubricants will report on a comprehensive study that it has made of the application of all recognized tests for petroleum products, including A.S.T.M. tests and others. The report will discuss the merits of these tests from the point of view of their usefulness as a measure of the factors that determine the serviceability of a wide variety of petroleum products. This study is a very necessary corollary to the committee's work of many years in the development of standard methods and anticipates, of course, the ultimate development of standard specifications where feasible.

In this connection there are scheduled two papers which discuss the significance of various tests determining the inherent value of motor fuel and motor oil. It is expected that these two papers will bring forth some very valuable discussion.

Cement and Concrete.—In two sessions on cement and concrete on Friday there are included some important contributions. Committee C-1 is presenting a complete report on an elaborate series of tests of 32 cements; and in the same session are papers discussing a proposed plastic mortar compression test, volume changes of cement, and resistance of portland cement to the action of sulfate waters. The papers on concrete cover such subjects as workability; permeability; freezing and thawing tests; tensile, compressive and flexural strengths of plain concrete; and concrete-steel bond.

In a session on Thursday evening three papers dealing with tests of mineral aggregates are included.

Miscellaneous Subjects.—Among other outstanding topics to be discussed are: a study of centrifugally cast iron pipe; ferrous silicates in steel; two papers on magnetic analysis as applied to tool steels; mechanical properties of nickel and nickel alloys; strength of brick in relation to compressive strength of brick masonry; efflorescence on limestone; and tests of drainage pipe.

Dudley Medal Awarded to A. V. de Forest

The second award of the Charles B. Dudley medal, established by the Society for recognition of meritorious papers on research in engineering materials, will be made to Mr. A. V. de Forest, Research Engineer, American Chain Co., Inc., Bridgeport, Conn., for his paper on "A Method of Graphic Representation of Magnetic Characteristics" presented at the annual meeting of the Society last year. The award is made upon the unanimous recommendation of the Medal Committee consisting of Zay Jeffries, chairman, P. J. Freeman and John H. Hall.

Mr. de Forest graduated from Massachusetts Institute of Technology in naval architecture in 1912. He was with the New London Ship and Engine Co. for a year, after which he became an instructor in civil engineering at Princeton University. He later studied metallography at Princeton and at Columbia University. He spent two years in the Research Department of the Remington Arms Union Metallic Cartridge Co., and in 1918 he assumed his present post as Research Engineer with the American Chain Co. For a number of years Mr. de Forest has been studying the magnetic properties of steel and more especially the correlation of magnetic properties with the metallography and physical properties of steel. He is one of the leaders in the research work the Society is doing in this subject through its Committee A-8 on Magnetic Analysis, of which he is the secretary. Mr. de Forest has made other contributions to our knowledge in this field, having presented a paper before the Society in 1923 suggesting a new method of magnetic inspection.

It is planned to make the formal presentation of the medal on Wednesday afternoon during the coming annual meeting of the Society, in conjunction with the Edgar Marburg Lecture.

Nominations for Officers

The following nominations for officers are announced:

For President:

G. W. Thompson, Chief Chemist, National Lead Co., Brooklyn, N. Y.

For Vice-President:

K. G. Mackenzie, Consulting Chemist, The Texas Co., New York City.

For Members of Executive Committee:

T. R. Lawson, Head, Department of Civil Engineering, Rensselaer Polytechnic Institute, Troy, N. Y.

H. S. Mattimore, Engineer of Materials, Pennsylvania State Highway Department, Harrisburg, Pa.

P. D. Merica, Director of Research, International Nickel Co., New York City.

Samuel Tobias Wagner, Consulting Engineer, Reading Co., Philadelphia, Pa.

These nominations were made by the Nominating Committee, the personnel of which was announced in the March BULLETIN, except that of Mr. Samuel Tobias Wagner, who was nominated by the Executive Committee in accordance with the provisions of the By-laws to fill a vacancy created by the declination of one of the members originally named by the Nominating Committee.

Each of the above nominees has indicated in writing his acceptance of his nomination. The By-laws provide that "further nominations, signed by at least 25 members, may be submitted to the Secretary-Treasurer in writing by May 20, and a nomination so made, if accepted by the member nominated, shall be placed on the official ballot" which "shall be issued to the members between May 20 and June 1."

Research Committee on Fatigue of Metals to be Organized

Upon recommendation of the Committee on Correlation of Research, the Executive Committee has authorized the formation of an A.S.T.M. Research Committee on Fatigue Phenomena of Metals, having the broad functions to conduct, correlate and summarize research in the fatigue of metals, and to report annually to the Society on this subject. Professor H. F. Moore, President of the Society and one of the leading workers in this field, has been designated as chairman *pro tem* of the new committee and authorized to take suitable steps to confer with interested members of the Society in the selection of personnel of the committee and its organization in a preliminary way. This action has followed the recent decision of the Engineering Division, National Research Council, to discontinue its Committee on Investigation of Fatigue Phenomena of Metals, which had been reached with the understanding that interested technical societies would undertake suitably to correlate and promote research in this field.

The decision to form this committee is an important step in carrying forward the policies of the Society in furthering its purpose of promoting knowledge of engineering materials. For many years the Society has been a forum for discussion of fatigue investigations, and the first Dudley Medal was awarded to one of the leading investigators in this field, Dr. D. J. McAdam, Jr., for his paper in 1926 in which he first announced his findings on the subject of corrosion-fatigue. In undertaking to correlate and promote researches in fatigue of metals, the Society is assuming a responsible task in which it hopes confidently to have the support of all who are interested in this important field of work.

Dr. Frank B. Jewett to be Marburg Lecturer

Will Speak on "Some Research Problems Involved in Transoceanic Telephony"

It gives us pleasure to announce that Dr. Frank B. Jewett, President of the Bell Telephone Laboratories and Vice-President of the American Telephone & Telegraph Co., has been selected to deliver the Third Edgar Marburg Lecture at the coming annual meeting. He will discuss "Some Research Problems Involved in Transoceanic Telephony," with appropriate reference to the application of materials in this outstanding accomplishment in telephony. His lecture will emphasize particularly the economic possibilities of research in industry—a subject upon which Doctor Jewett can speak with high authority, for the organization that he heads is an outstanding example of industrial research. The Lecture will be held at 4 o'clock on Wednesday afternoon, June 27.

Doctor Jewett is a leader in the electrical industry. He graduated from Throop Polytechnic Institute in 1898. After teaching electrical engineering and physics at the Massachusetts Institute of Technology for two years, he joined the engineering department of the American Telephone & Telegraph Co. in 1904. In 1912 he became Assistant Chief Engineer of the Western Electric Co. and subsequently became its Chief Engineer and its Vice-President. In 1925 he became Vice-President of the American Telephone & Telegraph Co. in charge of Development and Research and also President and Director of the Bell Telephone Laboratories. He has received the honorary degree of Doctor of Science from several universities. He is a past-president of the American Institute of Electrical Engineers, and from 1923 to 1927 was chairman of the Division of Engineering and Industrial Research of the National Research Council. He received the Distinguished Service Medal from the United States Government for scientific work during the World War and the Order of the Rising Sun from the Japanese Government for his work in electrical communication.

New International Association for Testing Materials

In response to the solicitation for applications for membership in the New International Association for Testing Materials made in the March BULLETIN, 82 individuals and 13 companies have applied for membership in the New International Association for Testing Materials. The applications will be forwarded to the secretary of that body, Dr. M. Ros, Leonhardstrasse 27, Zurich, Switzerland, from whom applicants will receive a membership card in due course. Any member wishing to apply for membership in the N.I.A.T.M. who may have mislaid the card sent for that purpose with the March BULLETIN, should write to the Secretary-Treasurer requesting that an application form for membership be sent to him.

W. H. Fulweiler Named on Permanent Committee

The Executive Committee of the Society has appointed Past-President W. H. Fulweiler, Chemical Engineer, United Gas Improvement Co., Philadelphia, Pa., to serve as the American member on the Permanent Committee of the N.I.A.T.M., which is the governing body of the Association and consists of one member from each country having at least 20 members in the Association. The Permanent Committee has started work on plans for the next International Congress, which will be held in Zurich in 1931.

A.S.T.M. Standards and the Architect

In a recent issue of the *Architectural Forum* a review appeared prepared by Frank W. Skinner of New York City, reviewing the 1927 Book of A.S.T.M. Standards. This appealed to us as a very forceful presentation of the value of standard specifications to the architect. Since the members of the Society are interested in the many applications of A.S.T.M. Standards, the review is abstracted herewith.

Until technical handbooks or pocketbooks for architects and engineers began to appear about 50 years ago, little was accurately known about the physical properties of building and industrial materials except what was found in generally inaccessible records of scientific investigations and published in more or less reliable text books. Builders and designers selected and proportioned materials largely in accordance with common practice, loose precedents, and their own arbitrary choice. They had little knowledge of strength and durability, especially under varying conditions, and scarcely any standards of quality except individual requirements, thus being practically obliged in large measure to steer a costly course between the Scylla of excessive strength and waste of material and the Charybdis of weakness, deterioration and disaster. In timber framing, in masonry and in structural ironwork this condition was acknowledged by the use of the famous "factor of safety," a sort of blanket insurance policy of allowing unit working stresses of from $\frac{1}{12}$ to $\frac{1}{2}$ the supposed breaking strength.

With the writing of standard specifications for wrought and cast iron and for iron structures, their publication and wider and wider acceptance by railroads and municipalities and their adoption by architects and engineers, more and more accurate and extended researches and records became available and were demanded until the recognition of the importance of accuracy and uniformity and the establishment of universal standards justified the creation of a great national society, representative of designers, producers and consumers. It is provided with funds and the endorsements of leading technical associations and equipped with the services of the most expert and experienced specialists who have systematically determined the strength and other qualities of the principal construction materials, established methods of testing them, and have fixed standard requirements for their essential properties that have been widely adopted by designers, manufacturers and purchasers to the vast promotion of the speed, safety, economy and durability of construction.

Every three years this society issues a new book of standards containing previous standards, any necessary revisions, and tentative new standards that are recommended for further application before final adoption. These standards are almost universally accepted and very widely adopted in manufacture and in specifications, promoting great uniformity of quality and requirements and effecting an enormous saving of individual time and responsibility.

The reviewer then proceeded to describe the contents of the volumes, mentioning the number of standards covering the various types of materials and giving greater detail concerning those standards of especial interest to architects, such as the specifications for portland cement, for lime, for gypsum and for hollow tile. The review is the most complete that has come to our attention and should serve to bring the Book of Standards very effectively to the notice of architects.

Membership in Perpetuity

Two perpetual memberships in the Society have recently been acquired, one by the Department of Water Supply of the City of Detroit and the second by the National Lead Co.

The fact that payment of the fee for perpetual membership relieves a company thereafter of the necessity of annual payment of dues and makes them independent of possible future increase in dues, may make this form of membership appeal particularly to large industrial companies having a naturally wide and continuing interest in the materials field.

At present eight organizations hold memberships in perpetuity and three individuals are life members.

World Engineering Congress in Tokyo

There will be held in Tokyo in October, 1929, a World Engineering Congress under the sponsorship of the Japanese Government in which all nations of the world have been invited to participate. As stated in the preliminary announcement:

"The Congress proposes to discuss various engineering subjects, in anticipation eventually to initiate and promote international cooperation in the study of engineering science and problems in all its branches and to cultivate a feeling of brotherhood among engineers of the world."

The Society has received an official invitation to participate in this Congress through the appointment of delegates and solicitation of papers for presentation at the Congress. The Executive Committee will appoint a committee to cooperate with the American Committee in charge of American participation, and in the meantime invites members of the Society to offer papers relating to engineering materials for the Congress. It is probable that Congress papers will of necessity be limited to subjects of broad national or international interest. There are many such subjects, however, in the materials field in the study of which our members are actively engaged, and the Executive Committee will be glad to receive any offers or suggestions.

Road Materials Definitions Discussed With British

The Society has accepted an invitation from the British Engineering Standards Association to discuss with them certain definitions of terms relating to bituminous road materials that have recently been under consideration in a committee of the International Roads Congress. The invitation was received through the American Engineering Standards Committee through its contacts for international standardization.

The Society's definitions for these terms were developed by Committee D-4 on Road and Paving Materials and are of interest in certain aspects to Committees D-2 on Petroleum Products and Lubricants and D-8 on Bituminous Waterproofing and Roofing Materials. Mr. Prévost Hubbard, secretary of Committee D-4, was officially appointed as the representative of the Society to discuss these definitions with the B.E.S.A. and is now in England for that purpose.

International Methods for Sampling Oils

The International Electrotechnical Commission has recently taken favorable action on methods for sampling insulating oils, and has submitted the methods to its constituent national committees for adoption. The U. S. National Committee through its group of advisors on this subject, which is headed by Mr. E. A. Snyder, one of the Society's representatives on the National Committee, has referred the methods to the A.S.T.M. for official approval as an international standard.

The proposed international standard follows very closely the provisions for sampling in the Standard Methods of Testing Electrical Insulating Oils (D 117 – 27) for which Committee D-9 is responsible, some minor changes having been made to adapt the methods to international use. Committee D-2 is also interested, being responsible for Tentative Methods of Sampling Petroleum and Petroleum Products (D 270 – 27 T) in which the method of "thief sampling" has been adapted from the requirements of Methods D 117. Accordingly, the Executive Committee has referred the proposed international methods to these two committees for comment and recommendations.

COMMITTEE ACTIVITIES

Space in the BULLETIN *is reserved for items of interest about committee activities. Officers of committees are invited to prepare information of suitable character for publication.*

Washington Group Meeting

The regular spring group meeting of committees of the Society was held at The Mayflower in Washington, March 21, 22 and 23. The plan of holding a number of committee meetings over consecutive days, which is probably unique in the activities of this Society, has worked out very successfully during the past few years, conserving the time and expense of the members serving on a number of committees. The group meetings in themselves are quite impressive, the one recently held especially so with 475 members gathered together, not in the usual type of convention but for the sole purpose of attending meetings of the standing committees. In all, 26 committees of the Society took part as indicated below, but with the many sub-committee meetings that were necessary the number of meetings held during these three days totaled approximately 100: A-1 on Steel, A-2 on Wrought Iron, A-3 on Cast Iron, A-5 on Corrosion of Iron and Steel, A-6 on Magnetic Properties, A-8 on Magnetic Analysis, B-1 on Copper Wire, B-3 on Corrosion of Non-Ferrous Metals and Alloys, C-1 on Cement, C-3 on Brick, C-7 on Lime, C-10 on Hollow Masonry Building Units, C-11 on Gypsum, D-1 on Preservative Coatings for Structural Materials, D-4 on Road and Paving Materials, D-5 on Coal and Coke, D-8 on Bituminous Waterproofing and Roofing Materials, Sub-Committee IV, of D-14, on Testing of Wire Screen Cloth, D-15 on Thermometers, D-17 on Naval Stores; Jt. Advisory Committee of A-5 and B-3, Technical Committee, of E-1, on Chemical Composition, Technical Committee, of E-1, on Methods for Density, Technical Committee, of E-1, on Plasticity, Consistency, Etc., Section, of E-1, on Coarse Screens, E-5 on Standing Committees.

In addition, meetings were held of the Joint Research Committee, of the A.S.T.M. and A.S.M.E., on Effect of Temperature on the Properties of Metals, of the Joint Committee on Phosphorus and Sulfur in Steel, of the Sectional Committee on Zinc Coating of Iron and Steel, of the Sectional Committee on Cast-Iron Pipe, of the Sectional Committee on Copper Wire, and of a Research Committee, of the American Foundrymen's Association, on Cast Iron Research.

An informal dinner was held on Thursday evening when the members had the pleasure of meeting and hearing the Hon. William P. MacCracken, Jr., Assistant Secretary of Commerce (for Aviation), and Admiral H. H. Rousseau, in Charge of Naval Oil Reserves. This dinner and other features of the meeting were arranged by the local Committee on Arrangements consisting of:

Jerome Strauss, Chairman

E. F. Kelley A. T. Goldbeck J. W. McBurney

All credit is due this committee for handling in a very able manner the largest group committee meeting yet held.

The various actions taken at the meetings on recommendations to be made at the annual meeting on standards and tentative standards will appear in the annual reports of the committees and accordingly are not covered here in detail. Brief mention is made of some few features of the committee work as follows:

Committee A-1 on Steel.—A note regarding the permissible overweight of plates ordered to thickness was approved for inclusion in standard specifications for structural steel for bridges, structural nickel, structural steel for buildings, and structural silicon steel. This note is the same as that in the A.R.E.A. general specifications for steel railway bridges.

As a result of replies to two questionnaires sent out to users of high-temperature and high-pressure equipment, the committee finds that there is not sufficient demand nor are the practices sufficiently standardized to warrant the preparation of a specification for material for use at 1000 or 1200° F.

The Sub-Committee on Springs is actively engaged in the revision of the specifications for railway springs. In this they are receiving the cooperation of the Technical Sub-Committees of the Railway Spring Manufacturers Association and the A.R.A. Mechanical Division through its Specification Committee.

The Sub-Committee on Steel Castings through a sub-sub-committee is engaged in the preparation of physical requirements for alloy-steel castings. Definite requirements have not yet been fully agreed upon.

The Sub-Committee on Forgings has been engaged in an exhaustive investigation on the effect of reduction of ingot to forging. The tests have all been completed and a final report will be presented in the near future. Progress is also being made in the preparation of two new specifications for alloy-steel forgings, one for annealed and normalized forgings and the second for quenched-and-tempered forgings. Two proposed new tentative specifications were approved by the committee, namely, for iron and steel chain, and for black and hot-dipped galvanized welded and seamless steel pipe for ordinary uses.

Committee A-2 on Wrought Iron.—The committee is investigating the differences between the physical properties of rolled and hammered wrought-iron forgings. An investigation on the effect of phosphorus on the physical properties of staybolt iron is progressing.

The committee is considering the desirability of revising the requirements in the specifications covering the method of manufacture. Wrought iron made from "all pig puddled iron" is now required, whereas wrought iron that meets the most exacting tests for high quality is being produced commercially by a radically different process without the use of a puddling furnace.

Committee A-3 on Cast Iron put into concrete form the suggested change that has been under consideration during the past year or more of the arbitration test bar and the tension test for cast iron. The proposal contemplates changing the arbitration test bar from a bar 1¼ in. in diameter, tested on supports 12 in. apart to a bar 1.2 in. in diameter, tested on supports 18 in. apart. It is planned to issue the requirements for the new bar as well as requirements for the tension test specimens as a separate document to be referred to in the several specifications for cast iron, including those for gray-iron castings (A 48 – 18), cast-iron soil pipe and fittings (A 74 – 18) and high-test gray-iron castings (A 88 – 24).

There has been conducted under the auspices of the committee during the past year an elaborate series of tests to determine the relation between the properties of specimens cut from iron castings and the properties of separately cast test bars from the same heats.

Committee A-5 on Corrosion of Iron and Steel is issuing new specifications covering zinc-coated barb wire and zinc-coated steel wire strand. The committee has under consideration the preparation of a specification for zinc-coated highway guard wire and chain length guards, both of which are of great importance in the increasing activity in highway construction.

(*Continued on page 8*)

Washington Group Meeting

(*Continued from page 7*)

Committee A-6 on Magnetic Properties is amplifying and revising the list of terms used in magnetic testing presented as information last year. The tentative methods of test for magnetic properties of iron and steel at low inductions for audio and power frequencies, submitted last year, are being modified slightly and are being recommended for advancement to standard.

Committee A-8 on Magnetic Analysis reviewed the present status of investigations on magnetic analysis now under way. A new investigation is now under consideration. This will involve a material other than the material in use in the present investigations, namely, the high-speed tool steel.

Committee B-1 on Copper Wire functioning as the Sectional Committee on Copper Wire under the procedure of the American Engineering Standards Committee, is recommending to the A.E.S.C. as American Standard the A.S.T.M. standard specifications for hard-drawn copper wire.

A formal sub-committee is being organized to consider the development of specifications for wire and for cable to be used for transmission of electric power.

Committee C-1 on Cement reviewed the data resulting from tests that the committee has had under way during the past year or more. These tests have been conducted by 47 laboratories on 32 brands of cement. Data were presented from the viewpoint of time of set, fineness of cement, consistency used and strength developed in the form of the usual test specimens, and briquets and compression test specimens made from a neat paste containing 42 per cent of water.

Committee C-3 on Brick is submitting to the Society new tentative specifications for concrete brick and tentative specifications for sand-lime brick. The present tentative specifications for building brick and for paving brick are being revised. The very important subject of weathering properties of brick is being recommended for study by a joint committee so that all those interested in weathering properties will cooperate on the one committee.

Committee C-7 on Lime.—The committee's methods for measuring the plasticity of lime are being slightly modified in reference to the requirements for the base plate used in the plasticimeter.

As an outgrowth of discussions in the committee during the past year as to the desirability of formulating specifications for lime plastering, the committee gave consideration to a plan that had been proposed for the formation of a Joint Committee on Specifications for Plastering upon which would be represented the various organizations interested in the development of plastering specifications with reference to lime, gypsum and cement plaster. This plan brought forth considerable discussion and it was finally decided to refer the question to the whole committee for a letter vote upon whether Committee C-7 would wish to participate in the activities of such a joint committee.

Committee C-10 on Hollow Masonry Building Units is revising the present standard specifications and tests for hollow burned-clay load-bearing wall tile. It was also proposed that very hard tile and tile having an absorption of less than 6 per cent should not be used for fire walls. However, these tile are satisfactory for outisde walls subject to alternate freezing and thawing.

Committee C-11 on Gypsum considered and approved a proposed program of tests to determine the working stresses in gypsum fiber concrete. Several very interesting reports were received on investigations covering the value of gypsum anhydrite mixes as a retarder in portland cement.

The committee discussed the proposal for the formation of a Joint Committee on Specifications for Plastering. The committee voted to approve the formation of such a committee and to participate in its activities provided that the plan met with the approval of the gypsum industry.

Committee D-1 on Preservative Coatings for Structural Materials.—Methods of test for nitro-cellulose lacquers are being submitted by the committee as well as modifications of the Society's present methods of analysis of paint materials.

A report was received on additional inspection of the panels exposed at Altoona, Pa., in connection with the committee's investigation on proper methods of preparation of steel plates for painting. The tests apparently are nearing completion.

Committee D-4 on Road and Paving Materials.—A report dealing with materials, proportioning and curing methods for portland-cement concrete pavements and bases was presented and recommended for publication with a view to eliciting criticisms, which should make possible the preparation of a detailed specification for these features of concrete pavements and base construction within about a year's time.

A complete form of practice for the inspection of bituminous paving plants engaged in the production of all classes of bituminous paving mixtures was presented and recommended for adoption.

Committee D-5 on Coal and Coke discussed the investigation of the accuracy of the standard method of sampling coal that is being made by its Sub-Committee on Sampling and Tolerances, of which Mr. W. B. Calkins is chairman. This sub-committee, which is cooperating with the Prime Movers Committee of the National Electric Light Association, is well along with a preliminary study of the subject being carried out with the cooperation of the U. S. Bureau of Mines.

Committee D-15 on Thermometers is suggesting a standard form for the thermometer for use in the testing of tung oil. This will complete the work of revising all of the thermometer specifications of the Society. It is also preparing a specification for a thermometer for use in connection with the Enger viscosimeter now being considered by Committee D-4 on Road and Paving Materials.

The committee previously had prepared a standard specification for a thermometer for use in the distillation of turpentine. It is corresponding with the Society's Committee D-1 on Preservative Coatings for Structural Materials looking toward the adoption of this thermometer in the turpentine specifications.

Committee D-17 on Naval Stores reviewed a mass of test data representing the results of tests on rosin for determining the softening point, melting point and viscosity. The committee decided to formulate procedures for the softening temperature by the capillary tube method and the ring-and-ball method for submission with the annual report of the committee as recommended procedures. The capillary tube method is to be used for determining the softening temperature of rosin in the "as received" condition and the ring-and-ball method for determining the softening temperature after melting and cooling.

Committee E-1 on Methods of Testing.—The Technical Committee on Consistency and Plasticity under the chairmanship of Prof. Eugene C. Bingham of Lafayette College, is making considerable progress in its very difficult problem of specifically defining "consistency," "plasticity" and related properties. The properties of matter involving flow are very diverse and many of the terms used do not even suggest that flow is involved. Such properties are ductility, hardness, solubility, melting point and shortness. It is assumed that only a few fundamental properties of matter are involved in the flow and that these can be expressed in absolute units, and it is on this basis that definitions are being formulated by the committee. The committee has under consideration the following definitions:

Consistency is that property of a material by which it resists permanent change of shape and is defined by the complete force-flow relation. In non-turbulent flow if this relation is linear, the material is said to be fluid, otherwise it is plastic.

Plasticity is that property of a material by which as the shearing stress is lowered it resists permanent change of shape relatively more than in the case of a fluid; thus for a plastic material the ratio of flow to force is not constant.

The Technical Committee on Coarse Screens has been studying the possibility of effecting some standardization in the screens used in the mechanical analysis of coarse materials. Two general types of screens are at present employed, namely, square-mesh screens and screens having round openings. Confusion develops, especially in the road-building industry, due to the fact that it is not always clear which type of screen is employed. A very extensive series of tests has been carried out by the committee to learn if either type of screen gives more consistent results than the other. Other factors involved are the relative costs of installation, the relative costs for replacement, the degree of accuracy of the screens as manufactured and the ability to maintain this accuracy in use, length of time required in making tests and to secure a satisfactory end-point, and the extent to which the two types of screens are employed in industry.

Committee B-2 on Non-Ferrous Metals

Committee B-2 has been very active during the past year. At a recent meeting held in New York on March 21, action was taken on new standards and tentative standards. The committee is submitting new specifications for fire-refined copper other than lake, for seamless copper tubes, for sand castings of the alloy: copper 80 per cent; tin 10 per cent; lead 10 per cent, and for silver solders. Several tentative specifications are being recommended for advancement to standard covering brazing solder, aluminum bronze castings, brass or ounce metal sand castings, yellow brass sand castings for general purposes, bronze castings, and car and tender journal bearings. The committee further recommends that the standard specifications for brass ingot metal for sand castings be revised and published as a tentative standard.

Die-Casting Alloys

A very comprehensive series of cooperative tests on both aluminum-base and zinc-base die castings is being carried on by Sub-Committee XV on Die Cast Metals and Alloys. One of the economies possible in large scale production of similar parts is that resulting from the use of identical castings formed by the use of pressure in metal molds. Such die-cast parts can be produced to exact dimensions, with cast threads or with other materials cast as inserts. In view of the desire of certain large consumers for dependable information on the properties of alloys suitable for die-castings, information which, in many cases, was not in the possession of the manufacturers, the investigation was undertaken. The aluminum-base alloy test program involving 50,000 specimens is well along towards completion and the similar program involving about one-half as many zinc-base specimens has been begun.

Materials and services were contributed on a large scale by both the largest producers and consumers in the field. Standard specimens and standard methods of test were adopted to enable various cooperating laboratories to obtain similar results on similar specimens. In addition to the common physical tests such as strength, hardness and brittleness, information is being accumulated on the corrosion resistance of the alloys.

Conference on Research in Coal

Dr. H. C. Porter, Chemical Engineer, Philadelphia, and Vice-Chairman of the Society's Committee D-5 on Coal and Coke, represented the Society at a conference held in New York City February 9 under the auspices of the National Coal Association for the purpose of discussing research in connection with coal and its by-products. The conference was well attended. Much interest was manifested in research activities relating to coal and the importance was emphasized of correlating such activities in so far as possible.

Committee D-13 Meets in Providence

One of the largest and most interesting meetings of the many such meetings that Committee D-13 has held was staged by that committee in Providence on March 8 and 9. One of the most important phases of the meeting was the emphasis placed on the writing of specifications for particular fabrics. One such specification is being submitted this year covering 23/5/3 carded American tire cord. In addition to these specifications the committee is submitting specifications for tolerances and test methods for asbestos yarns.

Another item of general interest discussed at the meeting was the need for a central testing laboratory where the committee might secure comparable and positive data on many moot questions. An example of this need was cited in the lack of definite information on the moisture regain of rayon.

Three formal papers were presented at the meeting as follows: "A Strength Test for Knitted Fabrics," by W. H. Whitcomb of the U. S. Rubber Co.; "A Practical Program for Humidity in Textiles," by Prof. George B. Haven of the Massachusetts Institute of Technology; and "Genetics in Textile Research," by Dr. W. F. Edwards of the U. S. Testing Co., Inc., and chairman of the committee.

Committee B-4 on Metallic Materials for Electrical Heating

Committee B-4 on Metallic Materials for Electrical Heating held an interesting meeting in Philadelphia on March 12 and 13. The committee is preparing a method of chemical analysis for sulfur by the evolution-titration method.

Further work has been done on the life test for durability of electrical heating wires of high temperatures and some changes have been made in the proposed method in order to obtain more uniform conditions. A method of testing uniformity of temper by determining the uniformity of stretch of a helical coil of the wire has been outlined and is being investigated. Tests have been made on samples of 80–20 nickel chromium wire which indicated that the so-called growth in service is really plastic deformation under externally applied stress. Additional tests are being made. Further work is planned to determine the mechanical stability of the electrical heating materials under service conditions.

Committee D-2 on Petroleum Products

In conjunction with the meeting of Committee D-2 on Petroleum Products and Lubricants, held in Cleveland on March 27, a new Sub-Committee XXX on Fuel Oil held its first meeting. This sub-committee plans to investigate the field of industrial fuel oil with respect to heavy oil through the medium of the Western Petroleum Refiners Association, and the National Petroleum Association, with a view to learning the characteristics of the oils likely to be encountered.

It is believed that the first efforts of this committee should be confined to indicating suitable tests for the different grades of industrial fuel oils, and after this has been accomplished, it should take up the preparation of specifications.

Committee D-2 is recommending for adoption as tentative methods for testing crude petroleum, for determination of autogenous ignition temperatures, for gravity of petroleum and petroleum products and for definitions relating to petroleum. Revision is recommended of the tentative method of test for melting point of petroleum. Recommendations are made for the advancement to standard of the tentative methods for saponification number, for cloud and pour points, for testing gas oils, and for carbon residue of petroleum products. The committee also recommends that the revision become effective immediately, of the standard methods of test for steam emulsion of lubricating oils, for water in petroleum products and other bituminous materials, and for sediment in petroleum products.

New Members to April 25, 1928

The following 77 members were elected from March 1 to April 25, 1928, making the total membership 4161:

Corporation Members (24)

Brooklyn Union Gas Co., The, F. C. Weber.
California Portland Cement Co., E. E. Duque.
De Laval Separator Co., The, T. H. Miller.
du Pont de Nemours & Co., E. I., G. E. Conde.
Dyer Quarry Co., The John T., F. T. Gucker.
Federal Shipbuilding & Dry Dock Co., J. C. Craven.
Fuel Engineering Co. of New York, G. B. Gould.
Gibson-Homans Western Co., P. C. Battenfeld.
Goulds Pumps, Inc., Hamilton Garnsey, Jr.
McKean County Refining Co., Earl Petty.
Neely's Pedigreed Seed Co., C. A. McLendon.
North Carolina Pine Assn., G. L. Hume.
Pennsylvania Electric Co., R. C. Grove.
Pirelli Limited, G. A. Pirelli.
Research Assn. of British Paint, Colour & Varnish Mfrs., L. A. Jordan.
Simplex Wire & Cable Co., H. A. Morss.
Standard Oil Co. of Louisiana, Research Laboratory, R. P. Russell.
Telefonaktiebolaget, L. M. Ericcsson, Kabelverket.
Tyler Co., The W. S., G. A. Disbro.
Union Switch & Signal Co., L. F. Howard.
Universal Portland Cement Co., B. F. Affleck.
Westchester Lighting Co., William Jordan.
Western Steel Products, Ltd., A. Wachsmuth.
Wilson-Maculen Co., Inc., C. H. Wilson.

Individual and Other Members (49)

Anderson, Lawrence (Pacific Coast Steel Co.).
Angstadt, H. F. (Sun Oil Co.).
Baldwin, F. G. (The Baldwin-Tarvin Co.).
Boismenue, D. E. (Standard Oil Co. (Ind.)).
Boneysteele, P. L. (Bitumuls Corp.).
Breyer, F. G. (Singmaster and Breyer).
Brookby, H. E. (Consulting Engr.).
Burr, H. A. (Tenn. Dept. of Highways & Public Works).
Cannan, G. A. (E. W. Saybolt & Co.).
Clark, Theodore (Kendall Mills, Inc.).
Cottrell, O. P. (Associated Oil Co.).
de Zafra, Carlos (Am. Soc. of Mech. Engrs.).
Dollin, E. N. (Allied Die Casting Corp.).
Ehrman, E. H. (Standard Screw Co.).
Evans, R. D. (Independent Oil & Gas Co.).
Evansville College Engineering Library, M. B. Robinson.
Gauger, A. W. (University of North Dakota).
Gray, A. W. (Dielectric Products, Inc.).
Hague, A. T. (Standard Oil Co. (Ind.)).
Hallenbeck, G. S. (Hallenbeck Inspection & Testing Lab.).
Hayes, J. E. (Ashley, Evers and Hayes).
Jarrait, N. P. (City of Detroit, Purchasing Dept.).
Johnson, A. S. (Sun Oil Co.).
Kirschner, J. (Dryden Rubber Co.).
Knight, G. L. (Brooklyn-Edison Co.).
McEver, W. L. (Nye Odorless Crematory Co.).
McNeil, C. P. (Standard Oil Co. (Ind.)).
Meyners, H. A. (F. J. Lewis Mfg. Co.).
Miller, H. C. (Public Service Electric & Gas Co.).
Miskella, W. J. (Consulting Engr.).
Myers, M. L. (Staten Island Shipbuilding Co.).
Nicholopulos, Stavros (Inspecting Engr.).
Prowell, H. D. (Westcott and Greis, Inc.).
Riggan, F. B. (Stockham Pipe & Fittings Co.).
Rockefeller, J. W., Jr. (Consulting Engr.).
Salem, City of, F. S. Barekhoff.
Sleaco, Herbert (Donaldson and Meier).
Soler, V. F. (Iron and Steel Co. of Monterrey).
Sproule, Thomas (Public Service Electric & Gas Co.).
Tenney, A. M. (Am. Bemberg Corp.).
Texas Technological College, Department of Civil Engineering, J. H. Murdough.
Tyne, T. D. (Alberene Stone Co.).
University of Michigan, General Library.
Van Poelvoorde, H. J. (Koninklyke Nederlandsche Petroleum Maatschappy).
Whinfrey, C. G. (General Elec. Co., Incandescent Lamp Dept.).
Whitman, E. B. (Whitman, Requardt and Smith).
Whitty, G. S. (Amalgamated Paint Co.).
Widemann, R. V. (Cie Gle de Construction de Fours).
Windes, F. A. (Windes and Marsh).

Junior Members (4)

Becker, J. R. (Westinghouse Elec. & Mfg. Co.).
Lux, G. A. (General Railway Signal Co.).
Namm, Edward (E. I. du Pont de Nemours & Co.).
Ruwe, L. F. (Fuel Oil Corp.).

Student Membership

The Student Membership on April 25, 1928, was 205, distributed as follows:

Rensselaer Polytechnic Institute	113
Cooper Union	33
Cornell University	19
University of Illinois	13
University of Michigan	12
Columbia University	5
Harvard University	4
Massachusetts Institute of Technology	3
Franklin Union	1
Newark College of Engineering	1
Virginia Polytechnic Institute	1

Deceased Members

We announce with regret the death of seven members:

ROY DALLIS, Vice-President, Elm City Cotton Mills and Manchester Cotton Mills, La Grange, Ga.
EARLE B. FOX, Professor of Materials and Metallurgy, Post-Graduate School, U. S. Naval Academy, Annapolis, Md.
JOHN S. GATES, Salesman, American Sheet and Tin Plate Co., 1704 Widener Building, Philadelphia, Pa.
WILLIAM F. M. GOSS, Barnstable, Mass.
W. S. GOULD, President, Fuel Engineering Co. of New York, 116 E. Eighteenth St., New York City.
GAETANO LANZA (*Honorary Member*), Philadelphia, Pa.
E. W. SAYBOLT, E. W. Saybolt and Co., Marcus Hook, Pa.

Gaetano Lanza

1848–1928

Later in life than to most men, death came on March 21 to Gaetano Lanza, honorary member of the Society. Although in failing health since 1914, he continued to be actively interested in the Society's work, serving on its Committee A-1 on Steel and Committee E-1 on Methods of Testing. Of the latter committee he was chairman from 1904 until 1920, and chairman *emeritus* from 1920 until the time of his death.

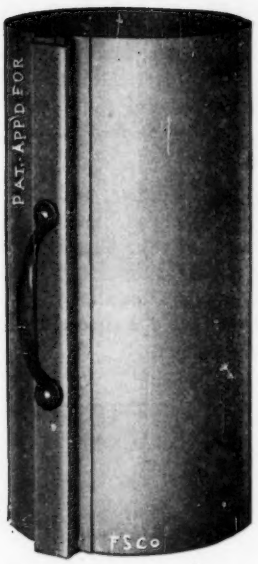
Professor Lanza was long associated with the subject of materials testing. After teaching for one year at the University of Virginia, from which he was graduated with honors in 1870, he became an instructor in mathematics at the Massachusetts Institute of Technology. In 1875 he was appointed Professor of Theoretical and Applied Mechanics. He was head of the Department of Mechanical Engineering for twenty-nine years and it was through his untiring efforts that this department reached the high standard that it attained. Professor Lanza established the first laboratory for testing full-size structural timbers and he considered that his best work had been done on full-size specimens for columns and similar structures. He was one of the pioneers in aerodynamic research and in 1910 built a small wind-tunnel and carried on investigations of far-reaching importance. Following his retirement from teaching in 1911, after forty-one years of service, he became consulting engineer to the Baldwin Locomotive Works.

He was the author of nearly a hundred technical publications, among his works being "Applied Mechanics" published in 1885 and used as a standard text in many schools and colleges, and "Dynamics of Machinery" which also met with popular favor. He was a member of the Society since 1899 and was made honorary member in 1920. He was the recipient of many honors, including a decoration by the King of Italy for his achievements in the engineering field. He endeared himself to all who knew him by his kindly sympathetic manner. In his death the Society mourns the loss of an eminent engineer, an excellent teacher, and an untiring worker.

PROFESSIONAL CARDS

PROFESSIONAL CARDS will be accepted for inclusion on this page from Consulting Engineers, Metallurgists, Chemists, Testing Engineers and Testing Laboratories.

SLIDE-LOCK MOLD FOR CONCRETE TESTING



FEATURES OF CONSTRUCTION

A sheet metal mold is open at both ends and split through its entire length. Heavy dove tail guides form a lock and the separate slide is the key which holds the seam together.

A separate plate of heavy sheet steel with two sides turned up form a base for this mold. Carriers spring into holes in the base plate.

There are two sizes of molds, one forms *uniform* test pieces 6x12 in. and another 8x16 in.

PRICES

	6x12 in.	8x16 in.
Slide Lock Mold.....	$3.50	$4.50
Base Plate	1.50	1.80
Carrier	2.50	2.80

POINTS OF SUPERIORITY

A sheet metal mold which is lighter and less expensive than cast molds.

It supersedes the paper mold because it will not break; it makes test pieces which are true in shape, accurate in dimensions, and it will not absorb moisture.

The mold can be quickly opened and closed, and is easily transported.

For Complete Description
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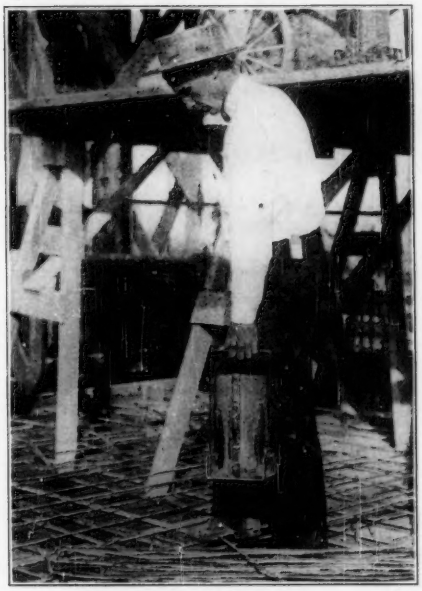

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EVERY STRAIN and SHOCK IMPOSED UPON A STRUCTURE IS ACCURATELY RECORDED

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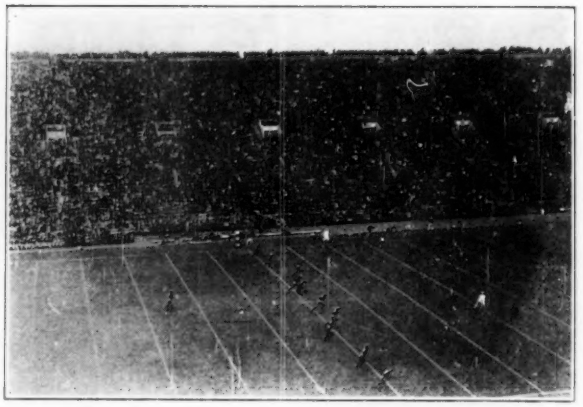
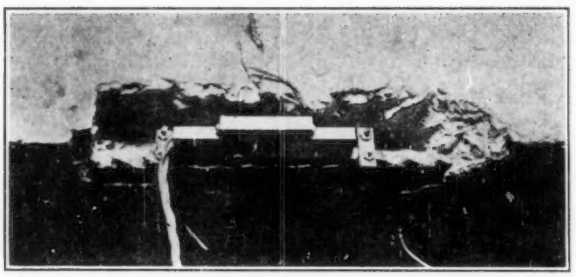


The Kick-off. Palmer Stadium, Princeton-Yale Football Game, 1924.

When it was suggested that Palmer Stadium at Princeton be repaired by adding a 4" concrete slab over the seating deck, the consulting engineers questioned the safety of the plan. In the absence of experimental data on live loads, the old substructure had been designed for 100% impact.

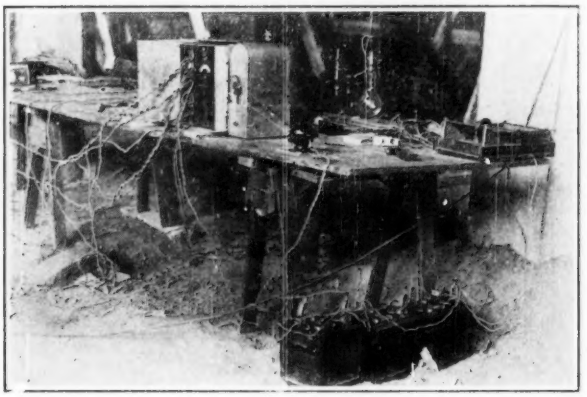
Prof. George E. Beggs, of Princeton, with Mr. O. S. Peters, and Prof. W. A. Slater, of the Bureau of Standards, used the McCollum-Peters Electric Telemeter to test the structure during the Princeton-Yale football game in 1924. They mounted six 8" gauge-length telemeters on the reinforcing steel at vital points under the cheering sections, and film was run from the time the first spectator entered the stands until the last had left.



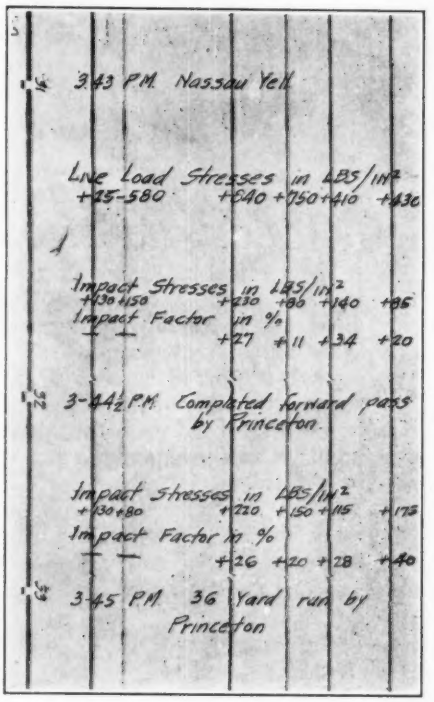
Electric Telemeter attached to a reinforcing rod under the stadium.

Sixty feet of film was exposed and all movements of the crowd recorded. Professor Slater in the stands used a telegraph key to mark events of the game on the film. It appeared from the record that 34% was the maximum impact factor and also that live load stresses were much less than derived from usual methods of computation.

The repair was carried out with confidence at a saving of not less than $50,000.00 over other suggested methods.



Telemeter Recording Apparatus under the cheering section.



Section of the film exposed at the game (1/3rd actual size).

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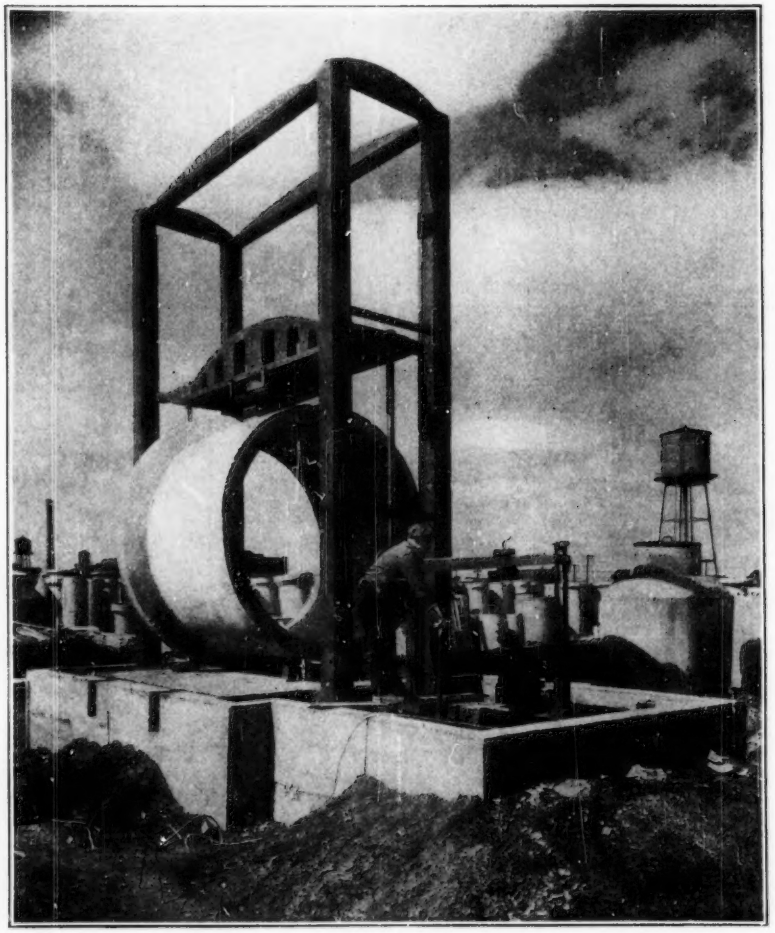

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